

The Primary Care Eye Exam: Evaluation of Ocular Injuries

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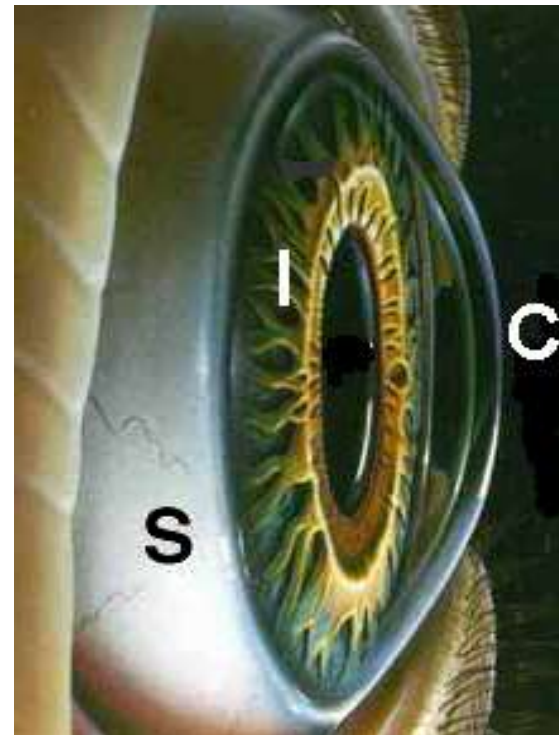
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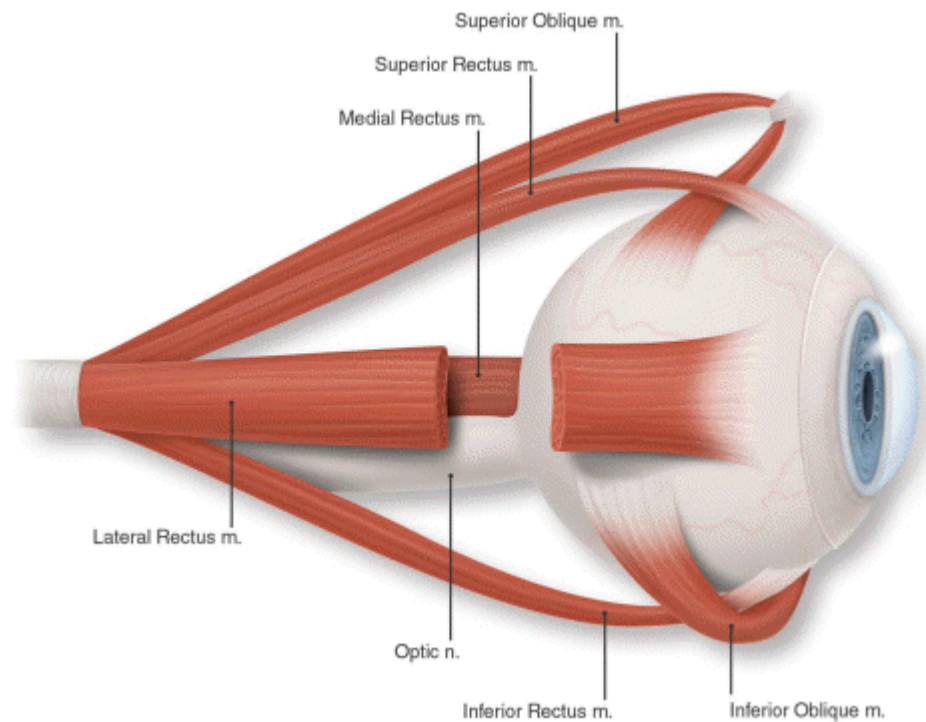
Iowa City VA Medical Center

Review of Ocular Anatomy

- Tear Film
- Cornea
- Sclera
- Conjunctiva
- Anterior Chamber
 - Full of Aqueous Humor
- Iris
- Pupil

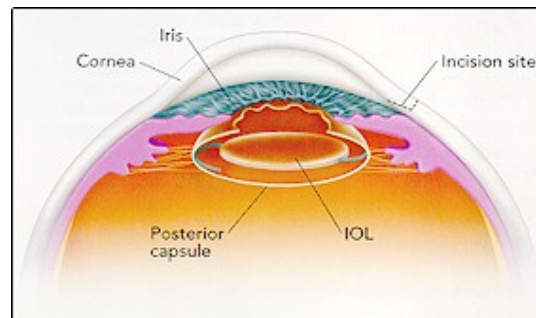


Extra Ocular Muscles



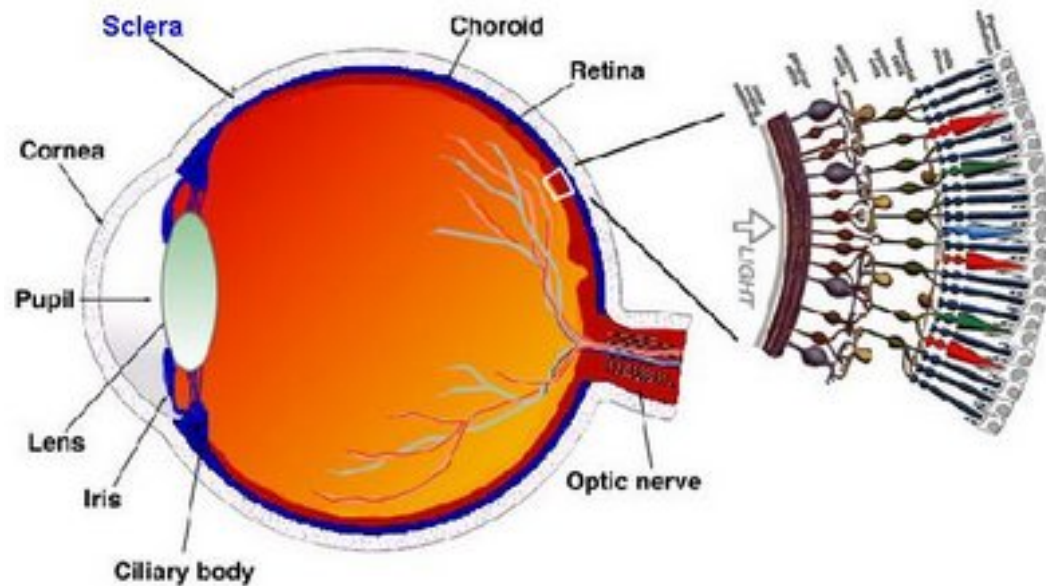
Review of Ocular Anatomy

- Crystalline Lens
 - Transparent Body of proteins and water enclosed in an elastic capsule
 - Flexing causes focusing (accommodation)

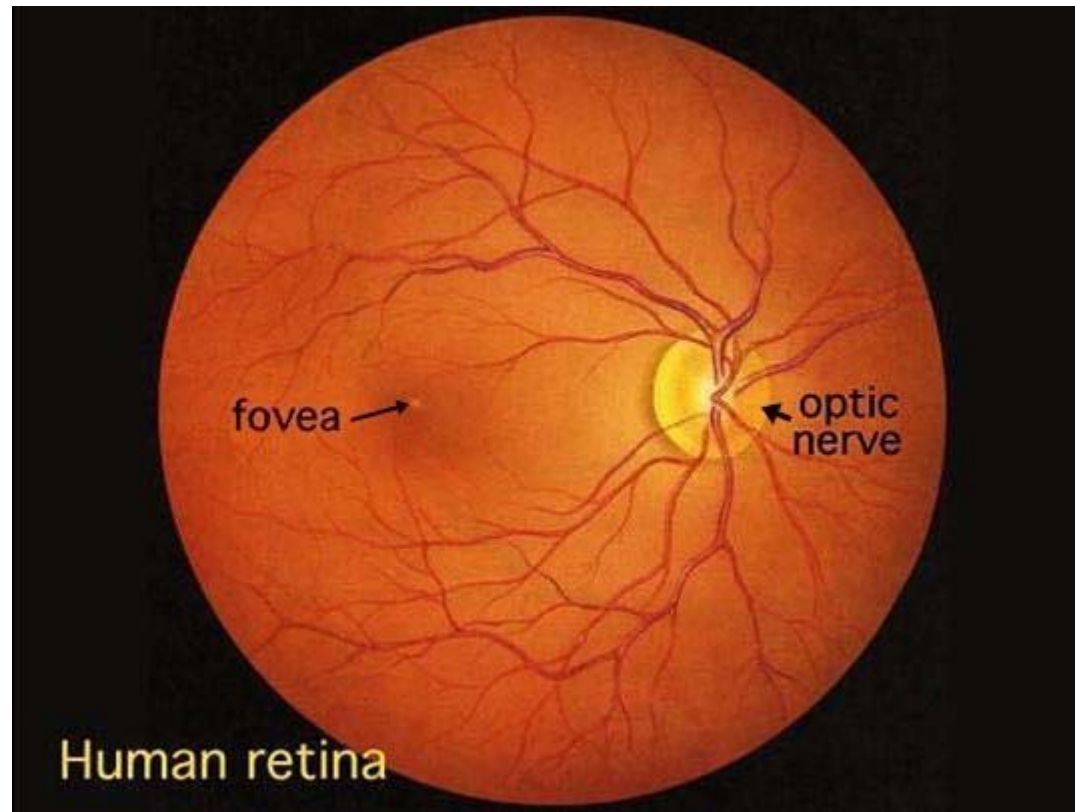


Review of Ocular Anatomy

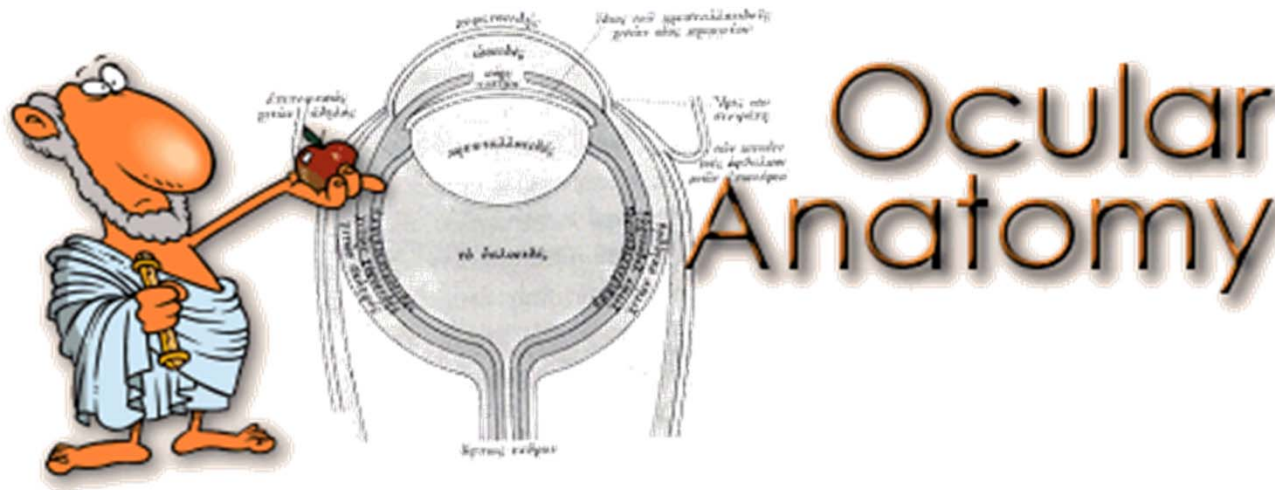
- Posterior Segment
 - Vitreous Humor
 - Retina
 - Choroid
 - Optic Nerve
 - 1,000,000 fibers



Posterior Pole



Whew! That was a lot!



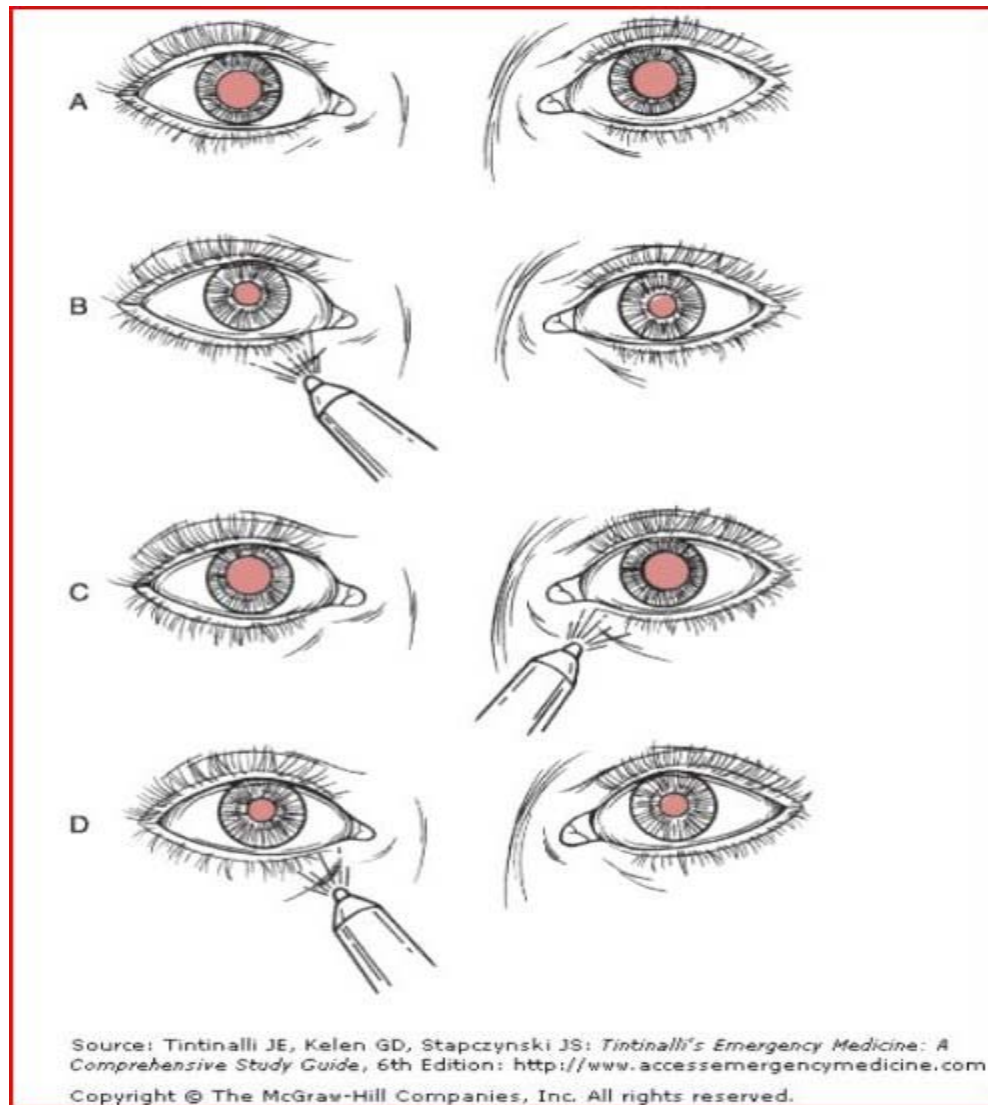
What Tools Do You Have?

- Your case Hx and your wits
- Visual Acuity Chart or Card
- Fingers and hands
- Fluorescein and saline
- Pen Light or Transilluminator
- Direct Ophthalmoscope
- Possible Slit Lamp
- Most will have little to no magnification
- NOT FAIR!

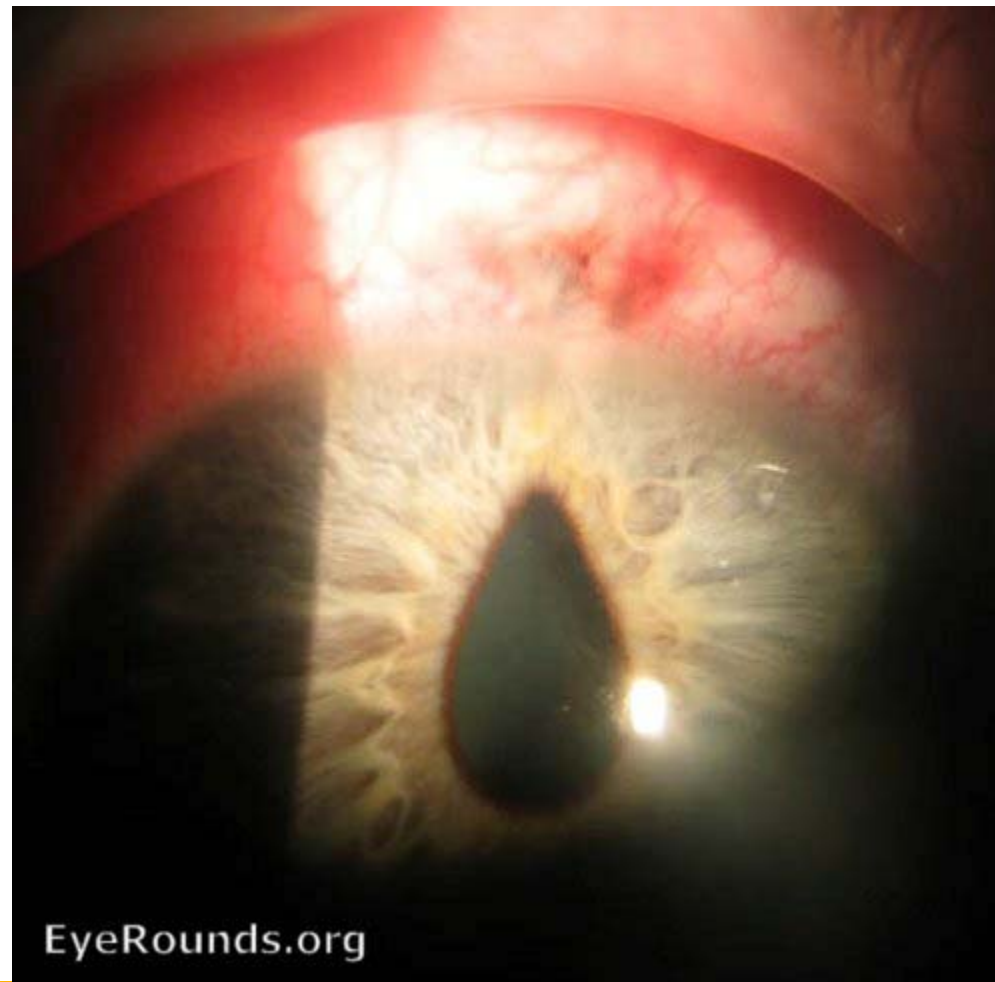
Pupil Exam

- Swinging Flashlight is NOT the Swinger's Club!





Peaked Pupil



Iridodialysis



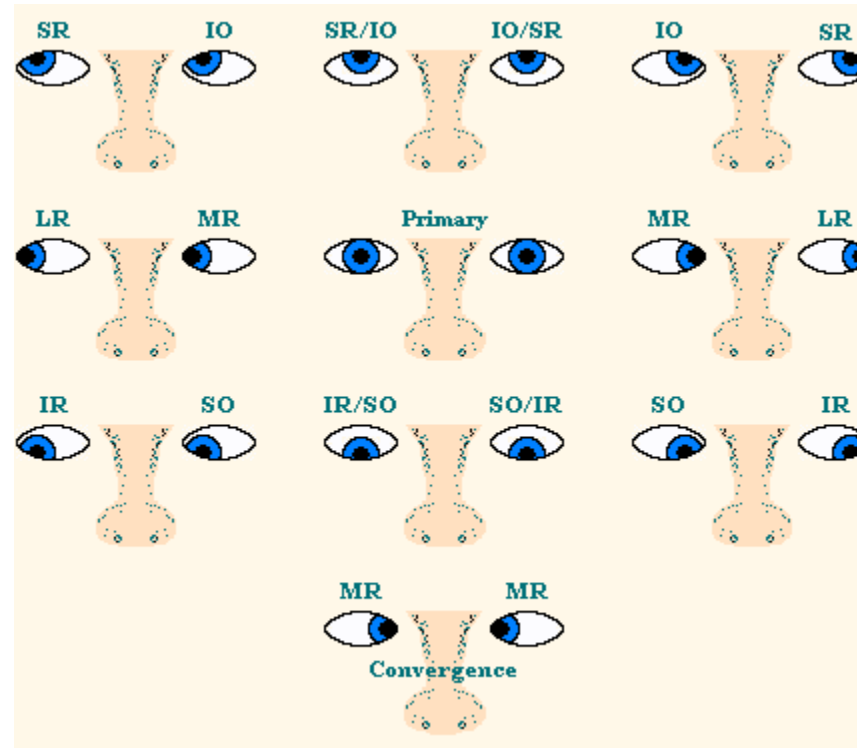
Cover Testing

- Useful for double vision complaint
- Penlight or a pen
- Reflex off of anterior cornea
- Centered?
- Cover with fingers or paddle
- Look for movement
- Pseudostrabismus

Extraocular Motility

- Useful for CN III, IV and VI
- H pattern vs Star Pattern
- Dolls-head technique

Restrictions of Gaze



Blowout Fracture

GLOBE-TO-WALL

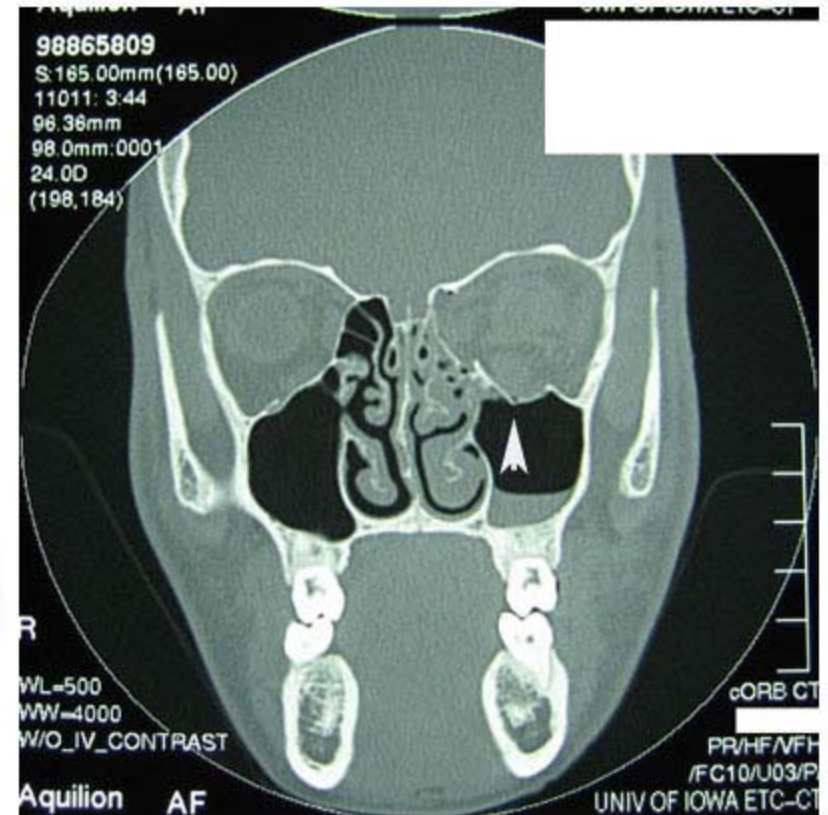
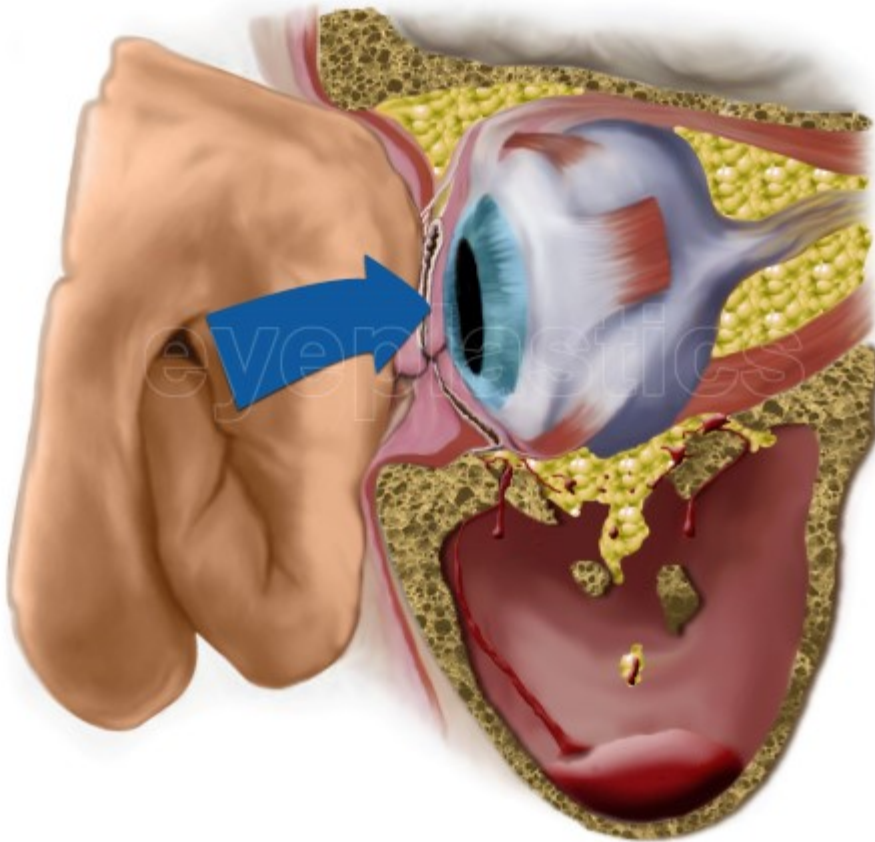


Fig. 2 CT scan.

Blowout Fracture

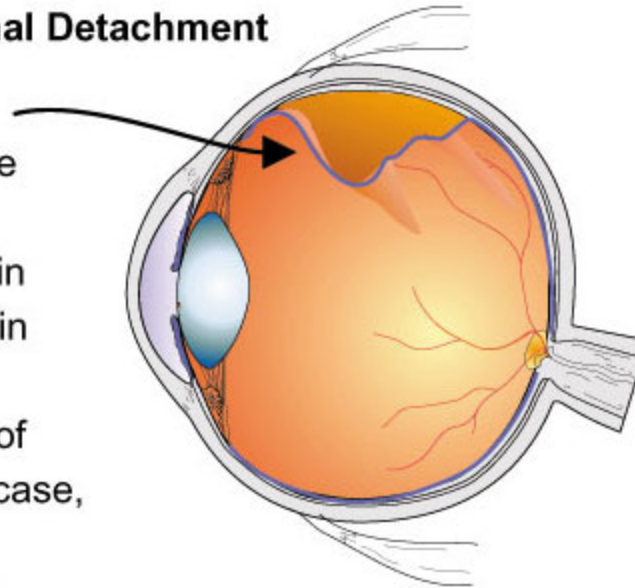


Confrontation Fields

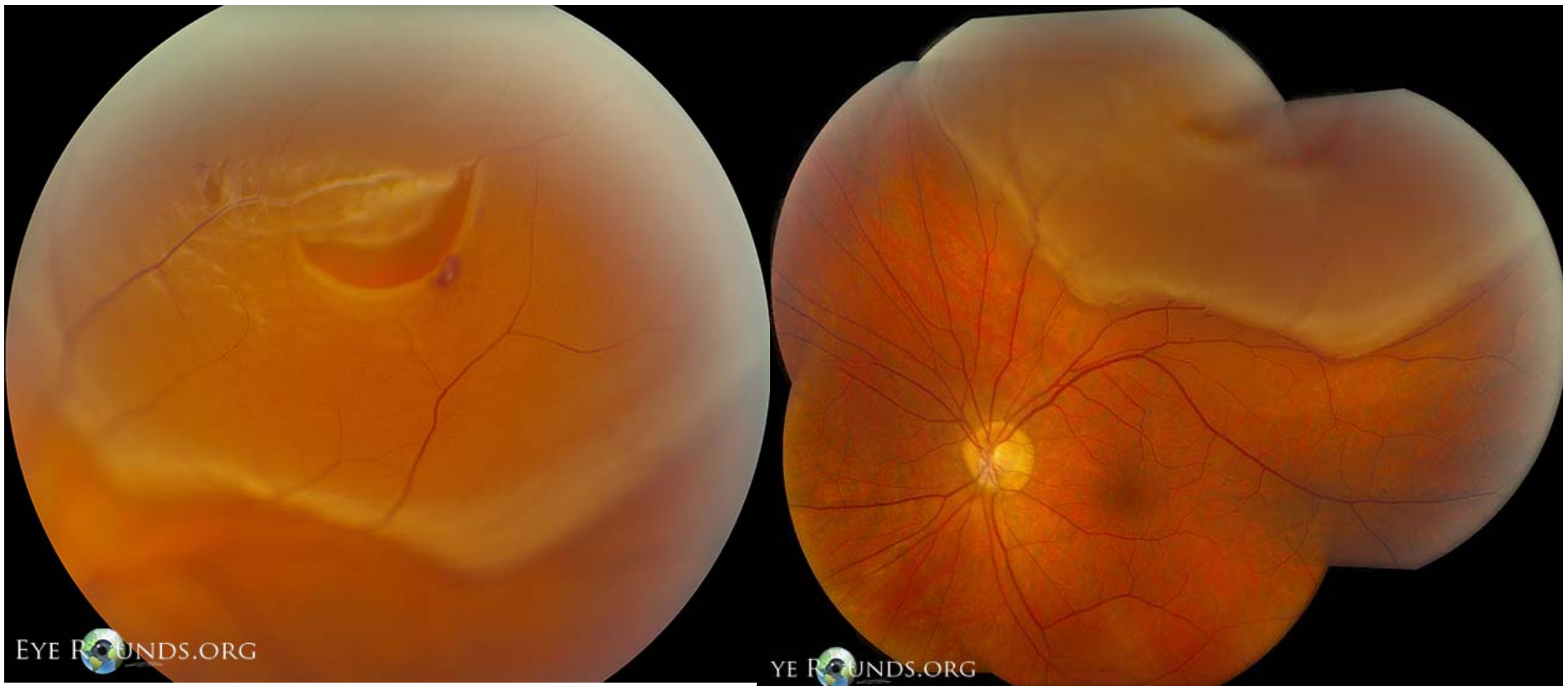
- 3 feet away
- Start with facial Amsler test
- Hands vertical and then horizontal
- Quadrants
- 1, 2, or 5 fingers half the distance between you and patient.
- Test each eye separately with good lighting

Retinal Detachment

If the retina is pulled loose the result will be hemorrhaging in the eye, spots in ones vision or complete loss of vision. In this case, it also causes flashes of light.



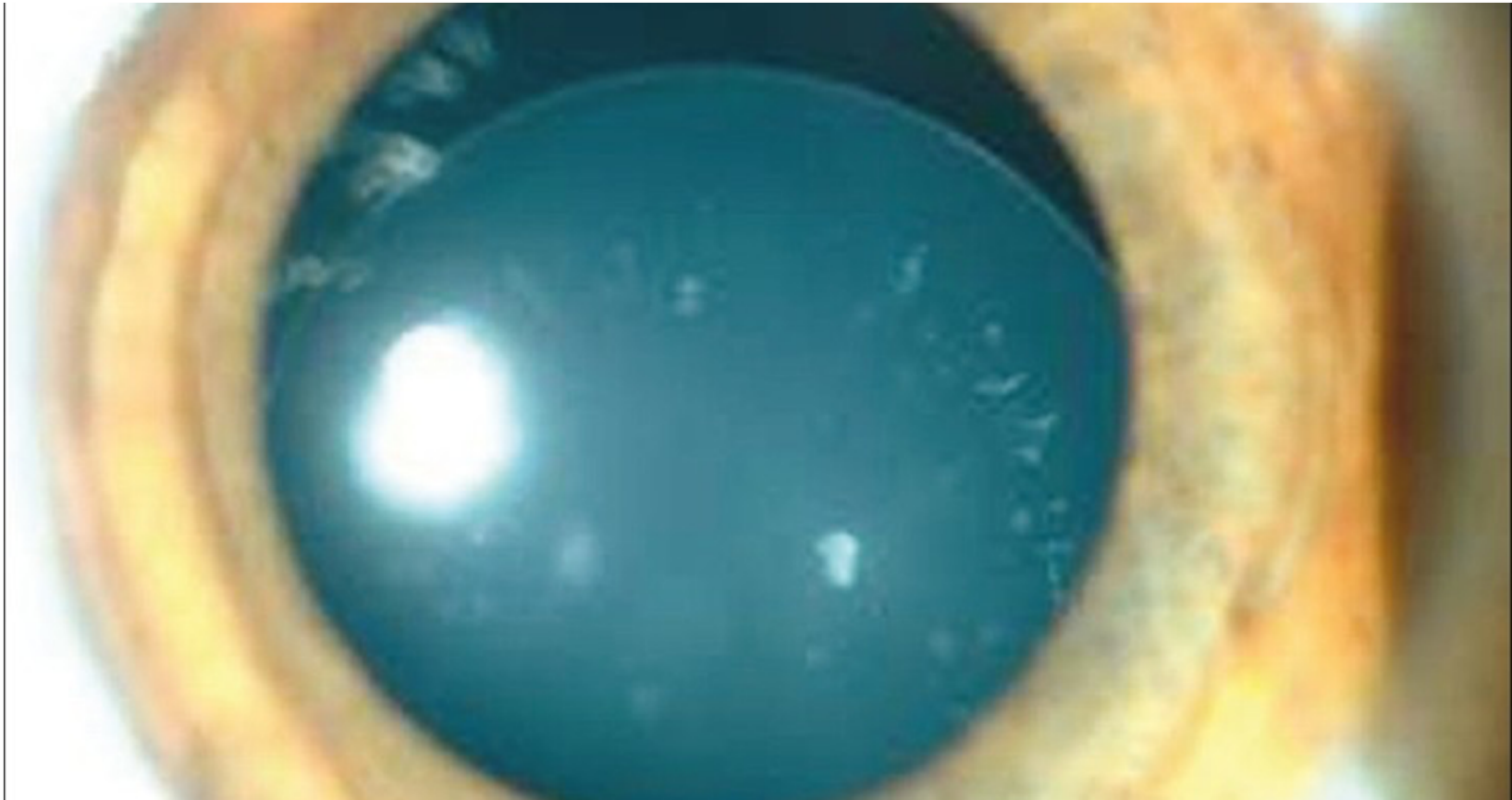
Retinal Detachment



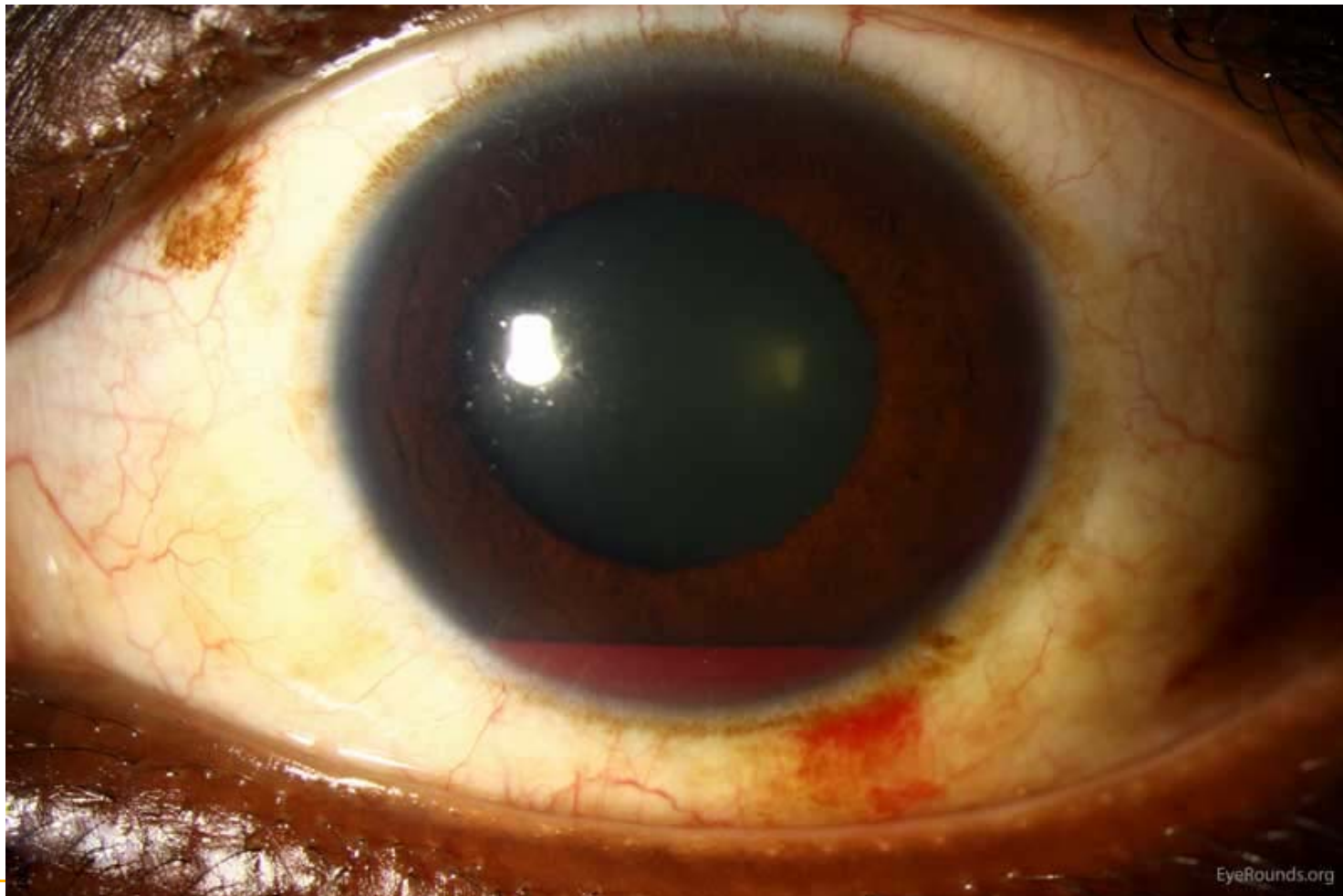
Retinal Detachment

- Most are idiopathic.
- History of trauma
- Monocular
- Flashes, floaters, spots
- Onset, Duration, Number of floaters
- Flashes and floaters post trauma are RD until ruled out!

Subluxated Lens



Hyphema



Hyphema

- Secondary Complications
 - Corneal blood staining
 - Rebleeds
 - Elevated Intraocular Pressure
 - Subsequent Traumatic Glaucoma

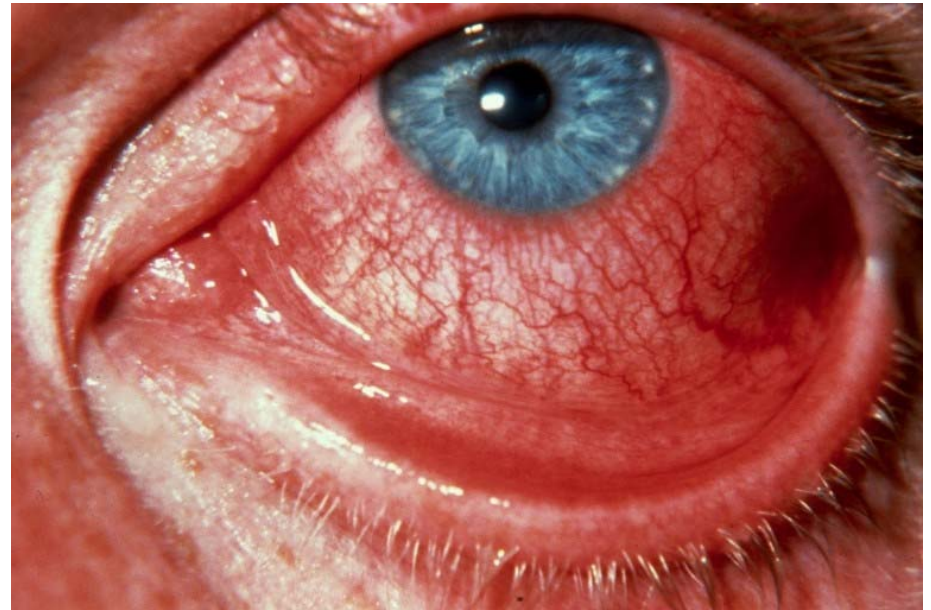
RED EYE

- Can be quite perplexing
- **EVEN WITH A SLIT LAMP!**
- Case History is Everything



Red Eye Causes

- Chemical
- Contact Lens Related
- Allergy
- Exposure
- Foreign Body
- Bacterial
- Viral
- Subconjunctival Hemorrhage
- Abrasion



Severe Chemical Exposure

- Usually diagnosed from case history
- FLUSH FLUSH FLUSH
- Refer
- Depends on substance
- White and Quiet?



Although the eye looks “white and quiet,” this is a severe alkali burn! The eye is “white” because of diffuse ischemia and blanching of the conjunctival vessels. This picture was taken one week following injury.

*Photograph courtesy of Dr. James Chodosh

Severe Chemical Exposure

- What is the causative agent?
 - Acid or Alkali
- Which is worse?

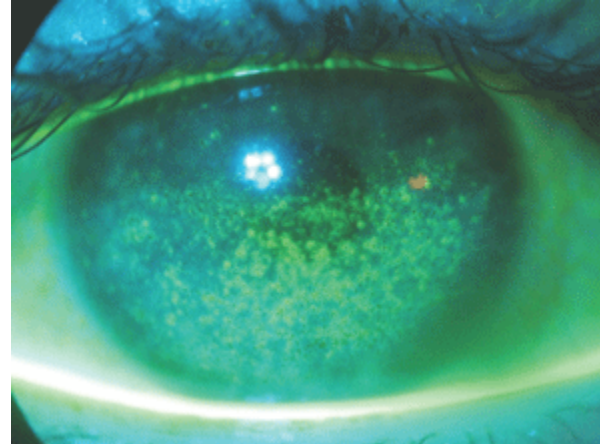
—Alkali

- Anhydrous Ammonia
- Lye and Drano
- Battery debris
- Fertilizers

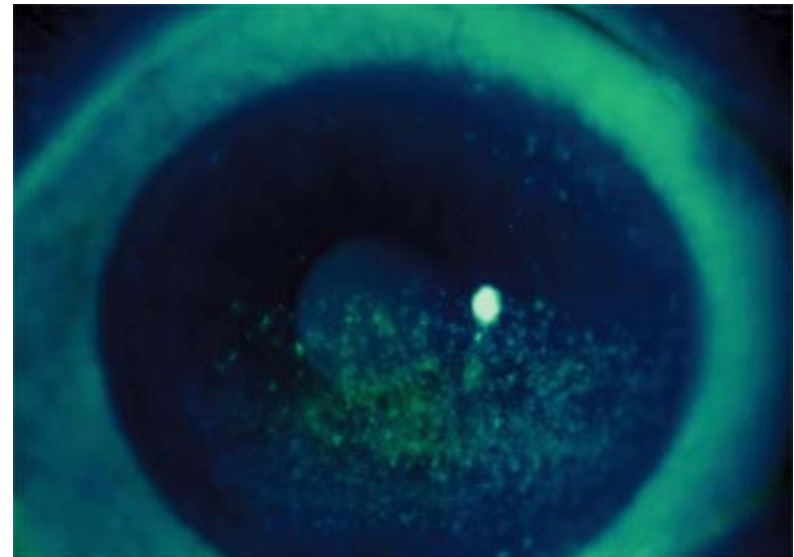


Chemical/Toxic Conjunctivitis

- Can be less severe and sometimes self-induced
- Eyedrops and cosmetics
- Vision usually good
- Education
- Cold Compresses
- Artificial Tears (PF)
- Referral?



Burton Lamp Evaluation



Direct Ophthalmoscope

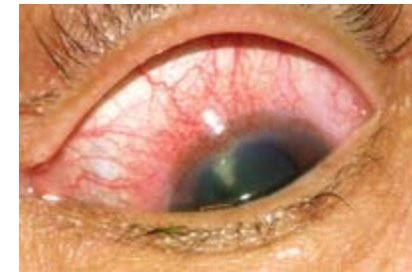


I think there's something in my eye...

Contact Lens Related

- Sleeping in Lenses
- Inappropriate Cleaning and Disinfecting
- Sharing Lenses
- Poor fit
 - Internet retail
- Overwear
- Solution Hypersensitivity

Contact Lens Related



- Pain
- Injection
 - + EAT AT JOE' S! sign
- Photophobia
- FB sensation
- Stains with NaFL
- Previous stromal scars

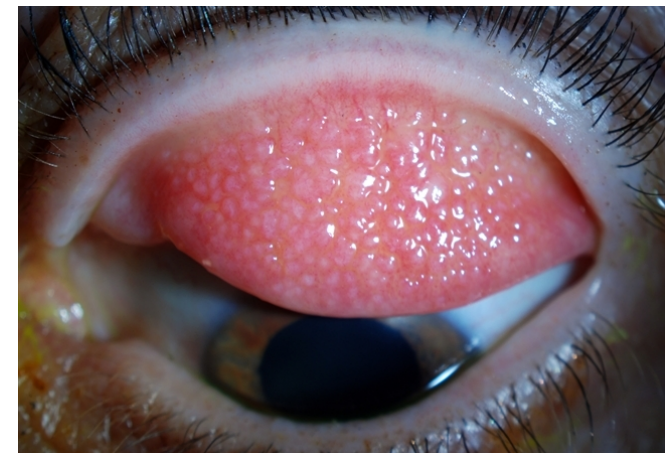


Contact Lens Related

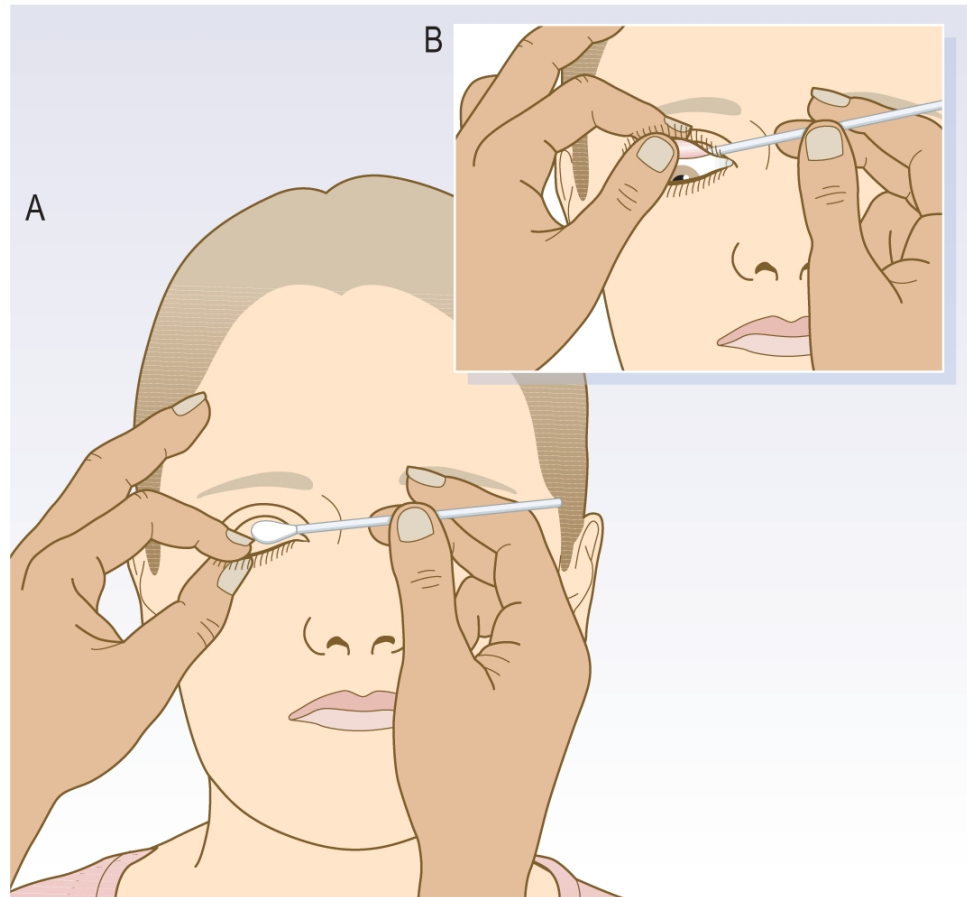
- Consult with their Contact Lens fitting doc – Refer!
- STOP wearing lenses
- Broad spectrum antibiotic (My favorites)
 - Vigamox (moxifloxacin) 3ml = \$68
 - Quixin (levofloxacin) 5 ml = \$64
 - Zymar (0.3% gatifloxacin) 5ml = \$77
 - Zymaxid (0.5% gatifloxacin) 3ml = \$121
 - Ocuflox (ofloxacin) 5ml = \$28
 - Ciloxan (ciprofloxacin) 5ml = \$41

Allergic

- Usually some external etiology
- Again, CASE Hx critical
- Usually bilateral
- May be seasonal or environmental
- Identify cause and remove
- Contact lens wear
- Papillae on palpebral conjunctiva

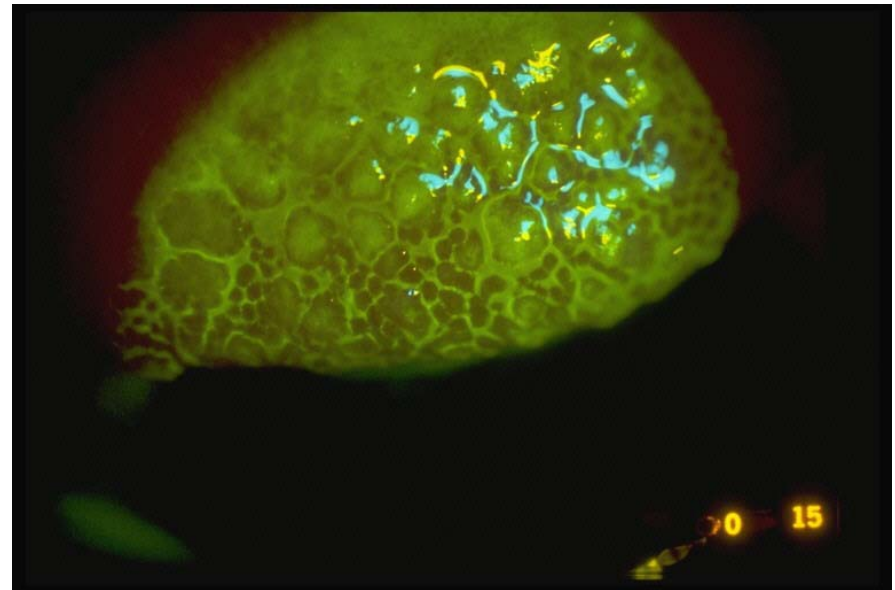


Allergic Exam



Allergic

- Stop Contact Lens Wear
- Treatment:
 - COLD compresses
 - Artificial Tears
 - Topical drops
 - Zaditor (ketotifen) - OTC
 - Patanol (olopatadine) – Rx only
 - Topical Steroid in severe cases – Refer for this



Exposure

- Nocturnal Lagophthalmos
- Ectropion in elderly
- Floppy Eyelid Syndrome
 - Mimics chronic allergic
 - Lax eyelid elasticity
 - Often in obese
 - Probably needs sleep study

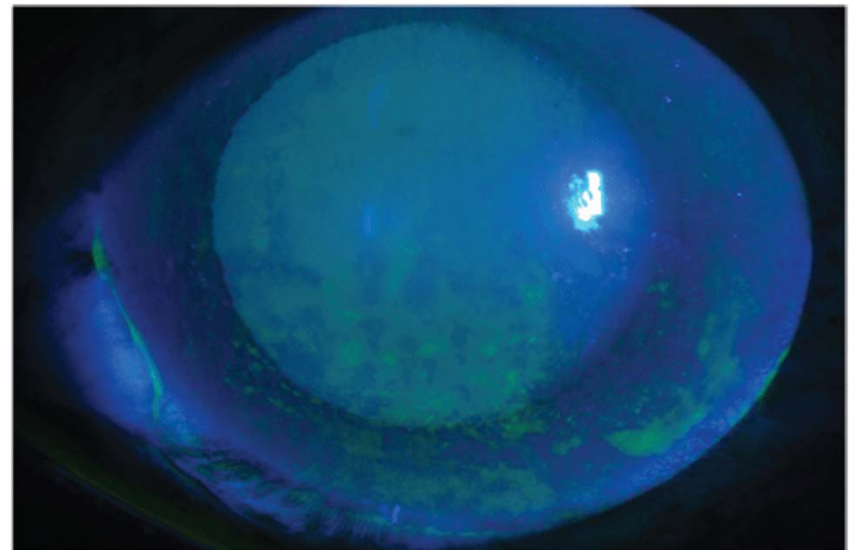
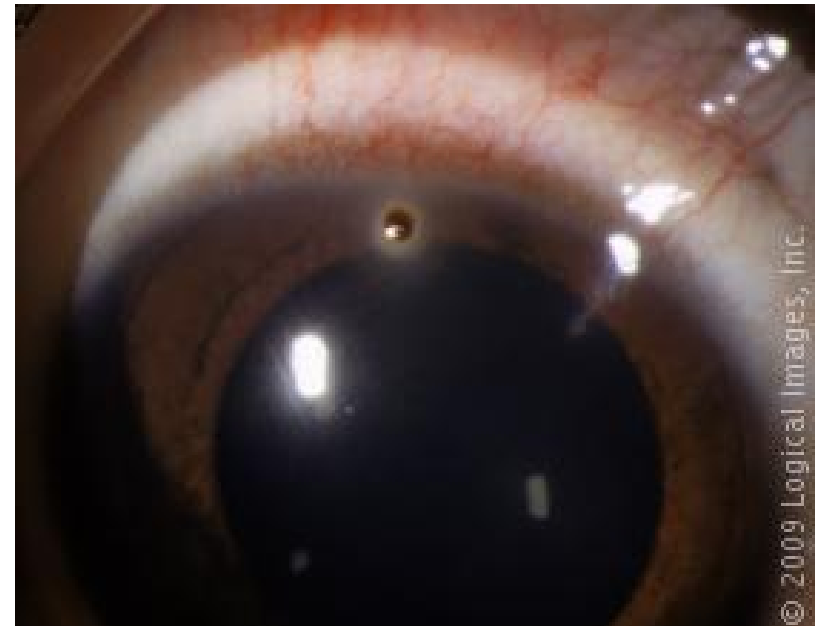


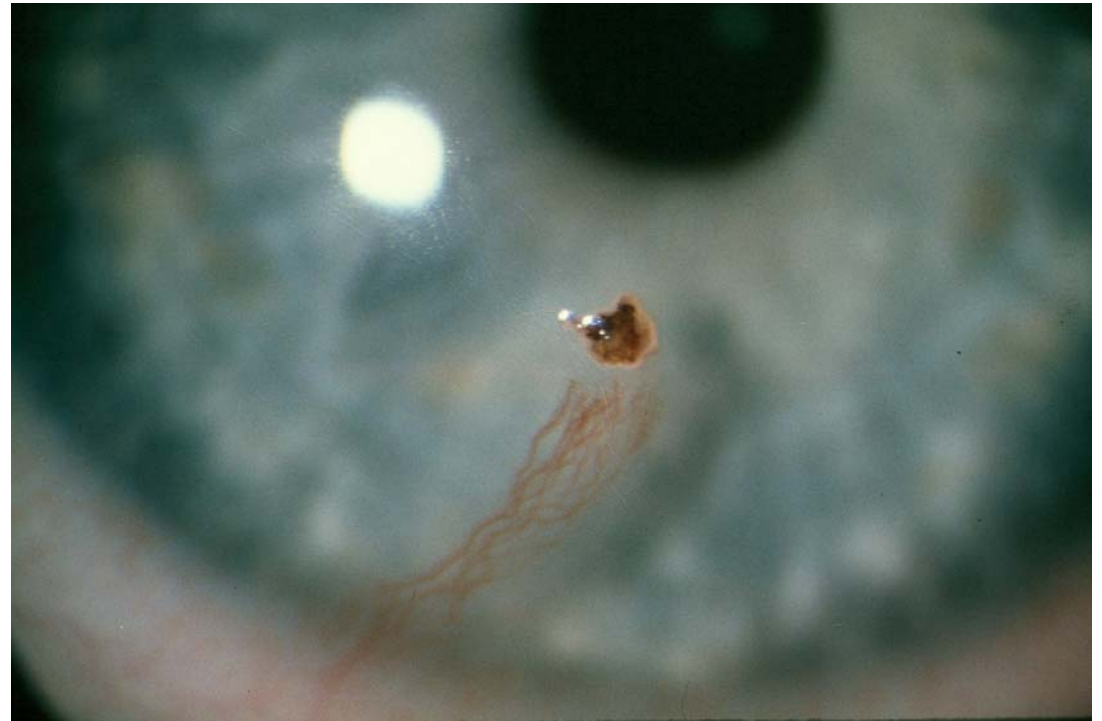
Figure 1. Corneal epithelial staining with fluorescein in a patient with severe dry eye.

Foreign Body

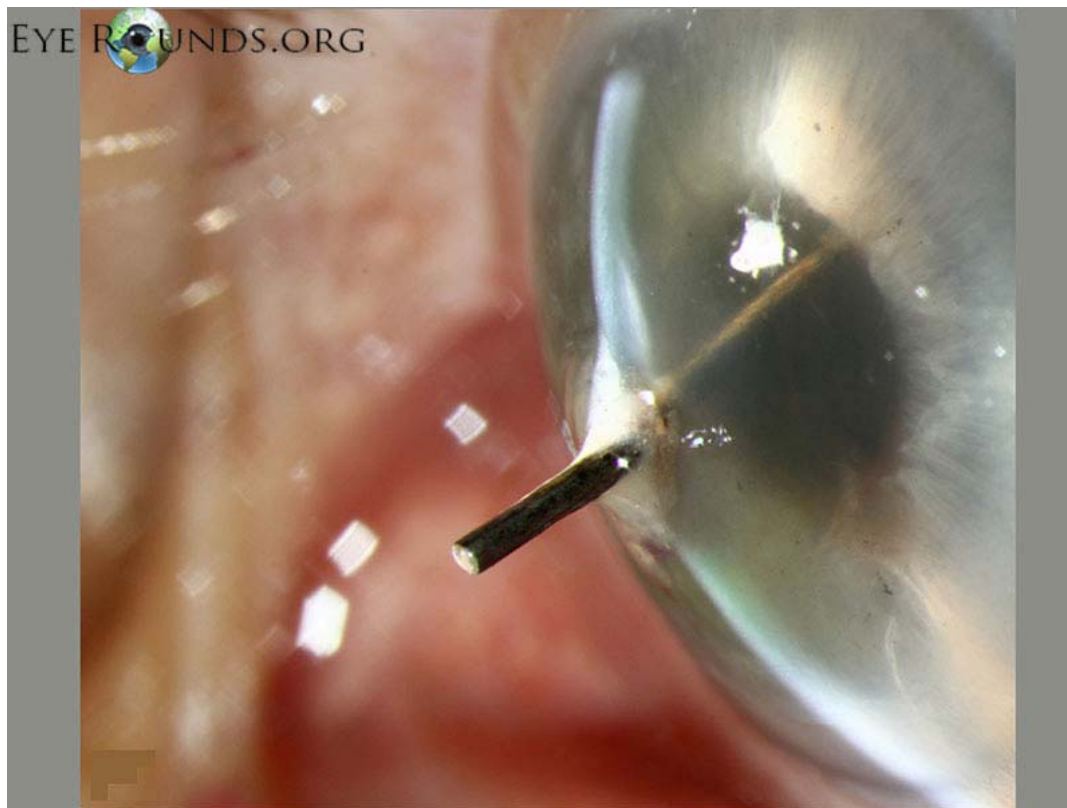
- Again, case history critical.
- Size matters.



Foreign Body



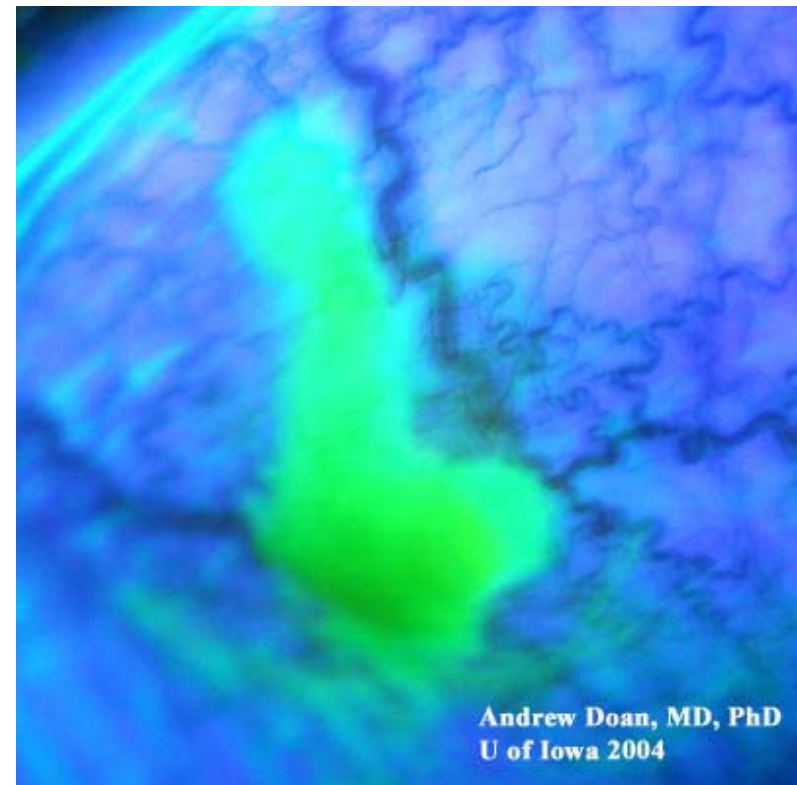
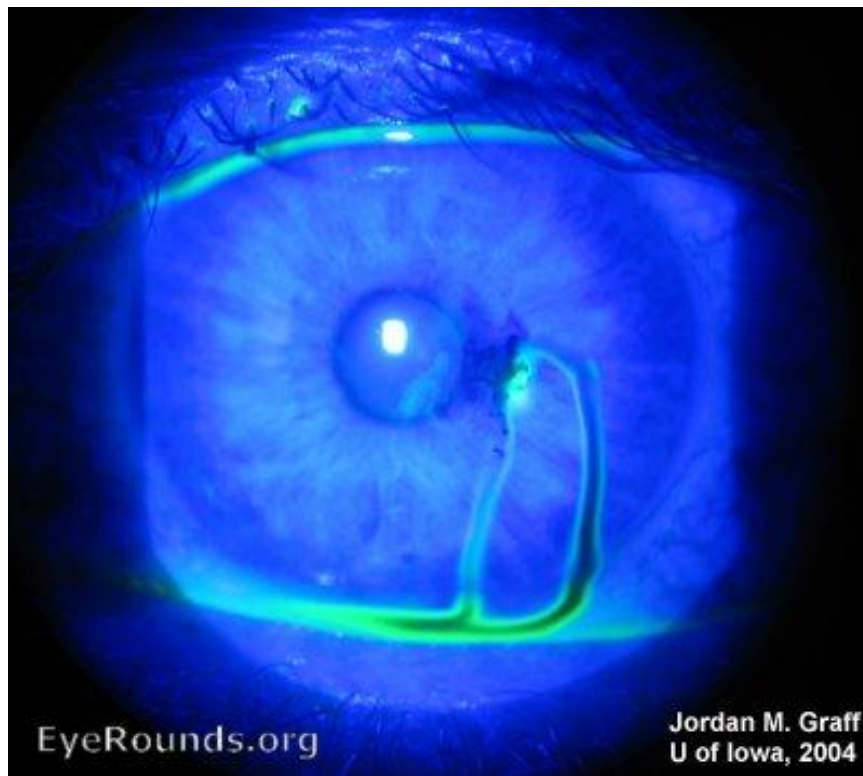
Foreign Body



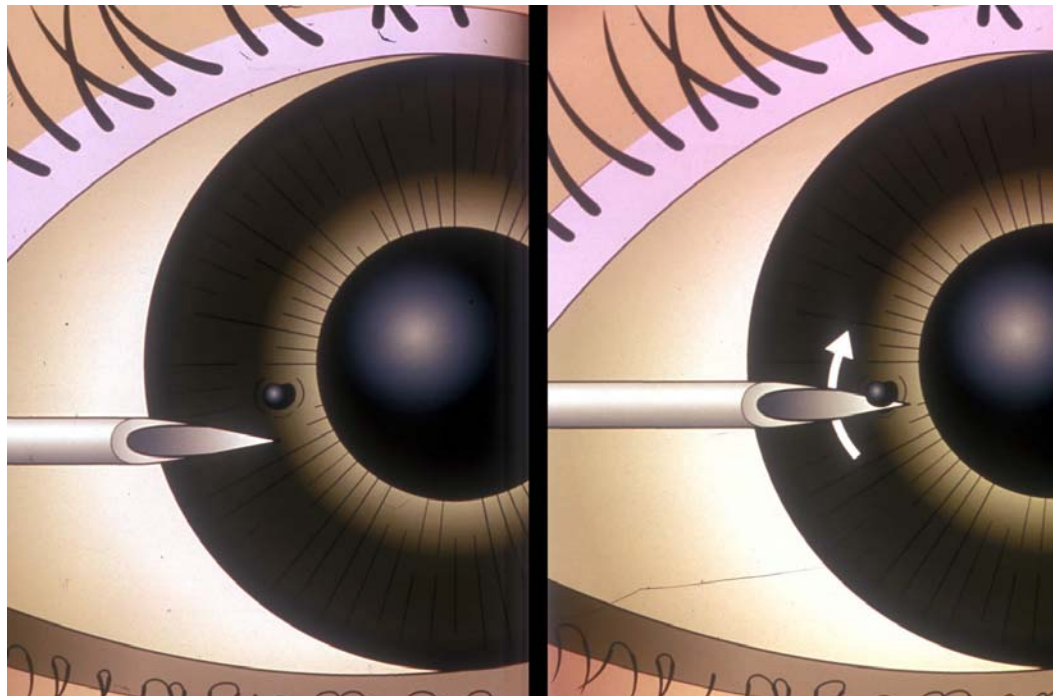
Foreign Body Exam

- Fluorescein
- Define borders and r/o Seidel Sign
- Referral
- Proparacaine
 -but don't send the bottle with the patient
 - 2 reasons:
 - Feels better and won't actually seek treatment
 - Toxic to cornea
- Tape eyelid or shield

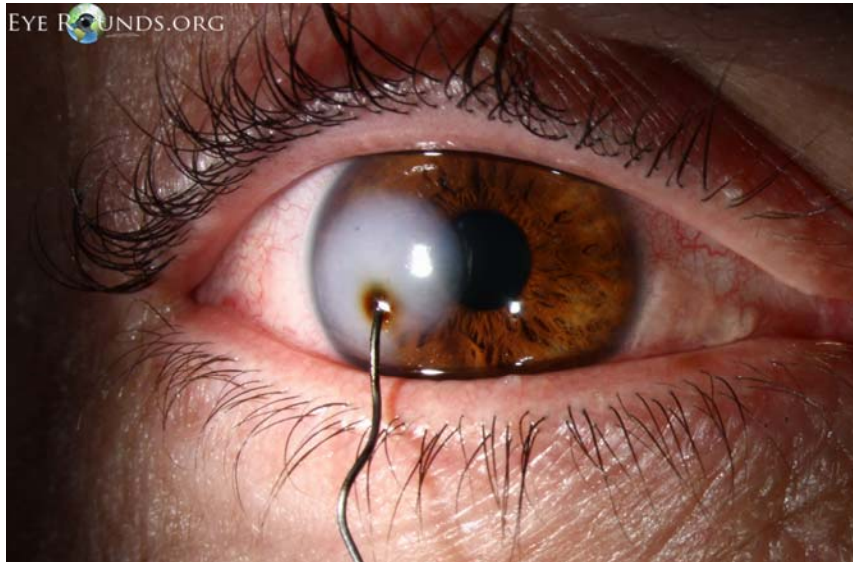
Seidel Test



Removal



Rust Ring



Alger Brush

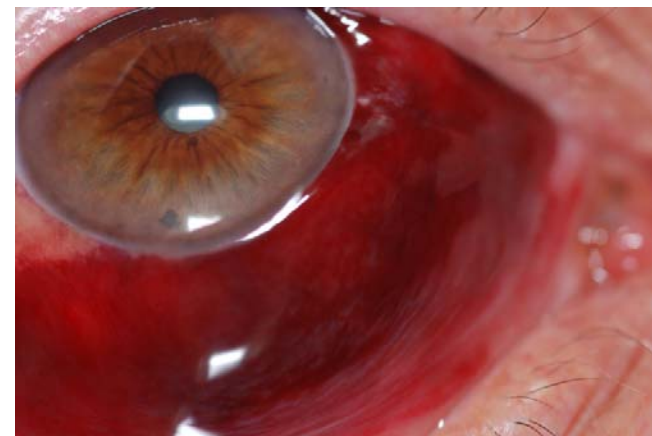


Eyedrop Technique

- Lower lid pocket
- Don't touch tip to eye
- Use bridge of nose



Sub Conj Heme



Sub Conj Heme

- Often on blood thinners
- Sometimes trauma
- + “Spouse Awareness” sign
- No vision changes or pain usually
- Cold Compresses and Artificial Tears as needed
- NO vasoconstrictors (Visine or Clear Eyes)

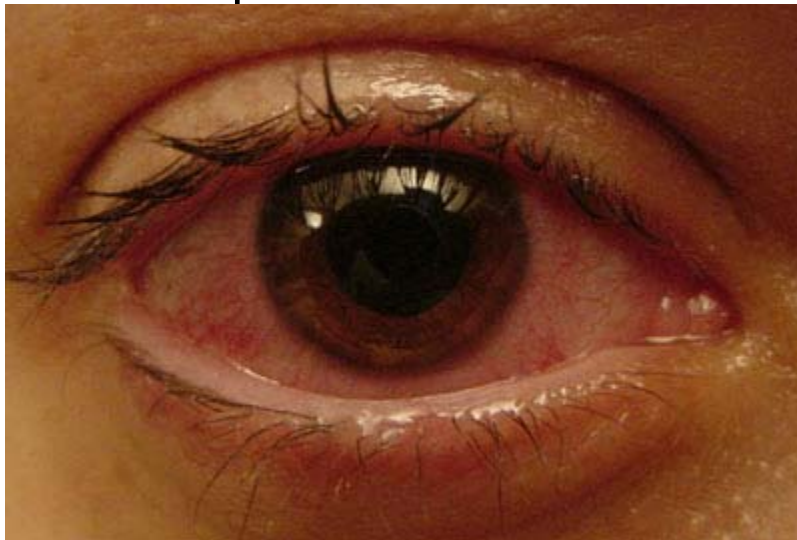
Episcleritis

- Often underlying cause
- IBS, RA, SLE, etc
- Tx: cold compresses
- Steroid or NSAID
- Workup if recurrent



Uveitis or Iritis

- Photophobia and redness
- Usually monocular
- Often post trauma



Uveitis or Iritis

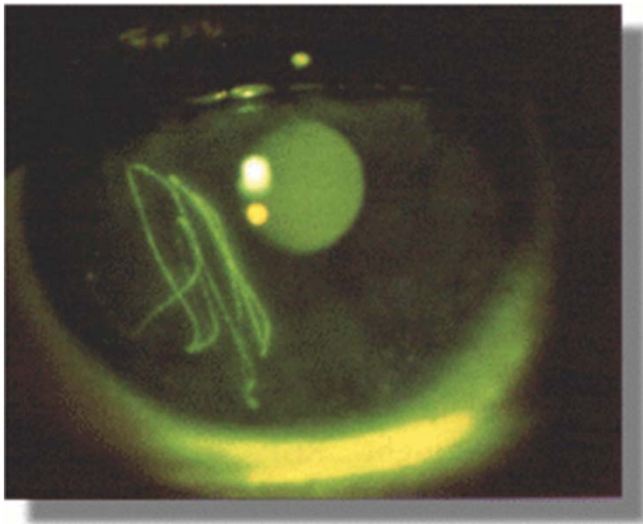
- Cycloplegic drops for pain
- Steroid Drops
- Should be referred to eyecare provider
 - Secondary glaucoma
- Comanagement is likely

Abrasion

- Case History
- Source
 - Kids, pets, branch
- Corneal Staining
- Pain/FB sensation
- Photophobia
- Watering



Abrasion

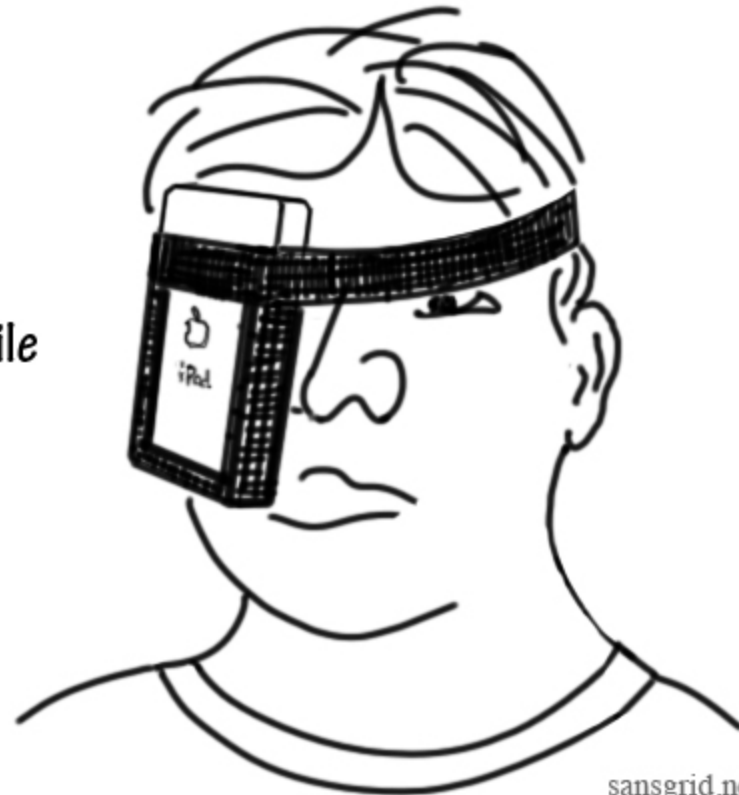


- NaFL staining
- Remove FB if suspected
- Proparacaine in office
- Refer for bandage contact lens
- Temporary pressure patch or tape eyelid shut
- Cycloplegic drops
- Broad Spectrum Antibiotic drops
- Close slitlamp exam monitoring

Patching vs Bandage Lens

iPatch

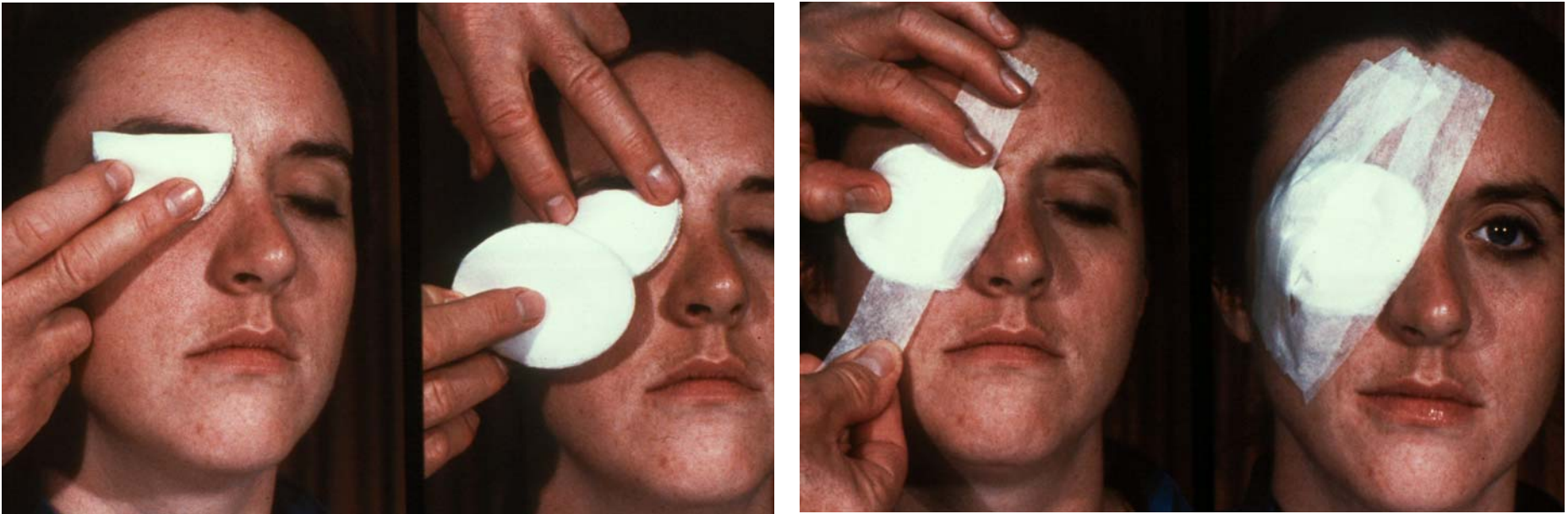
Hands free accessory for the iPhone and iPod. Watch videos while cooking, working in the garden or operating heavy machinery.



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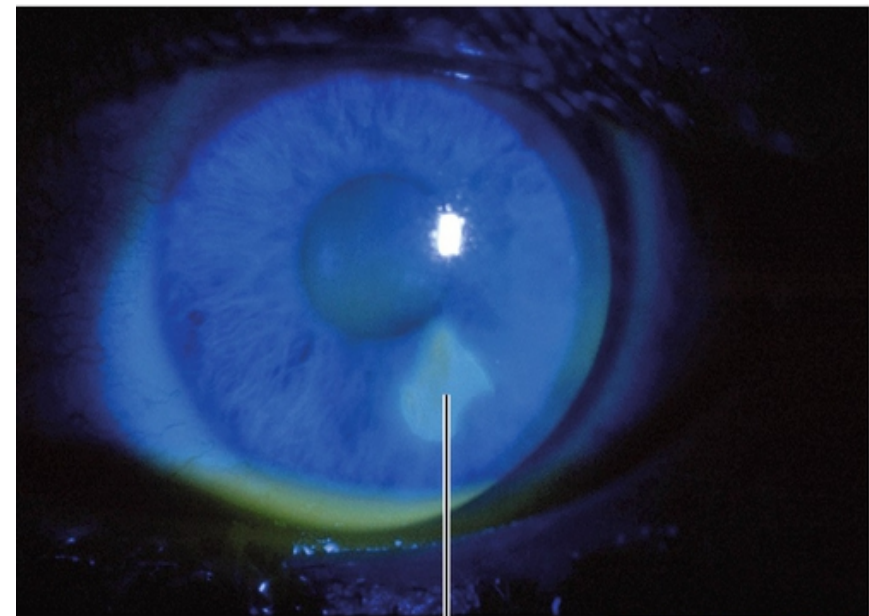
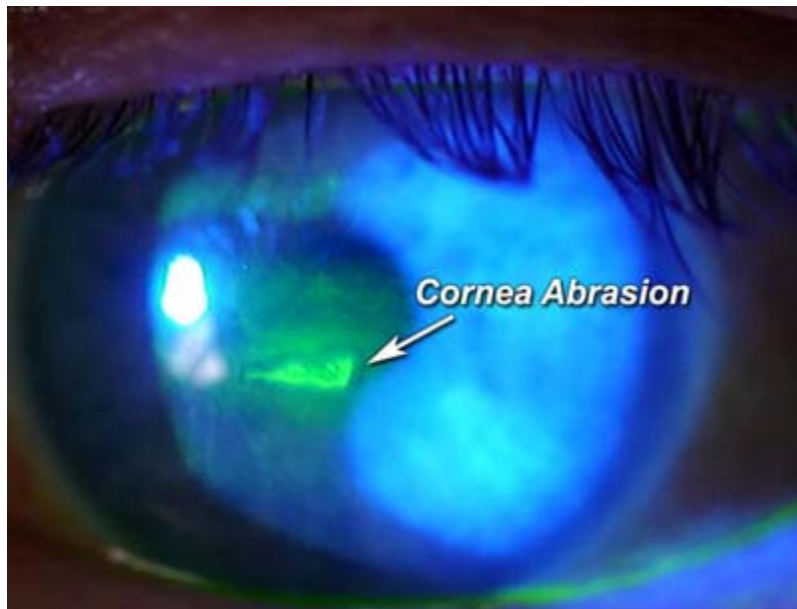
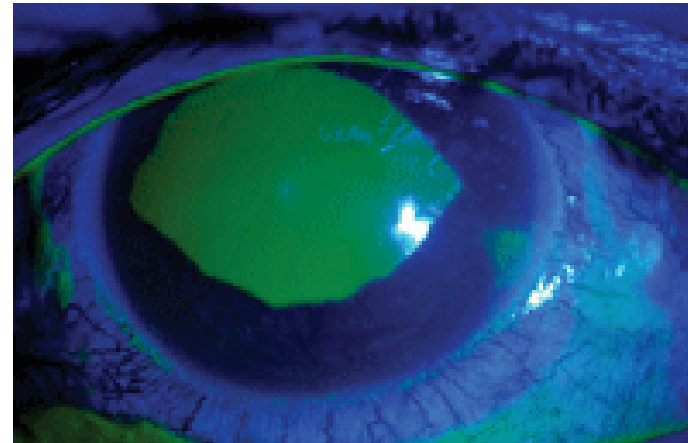
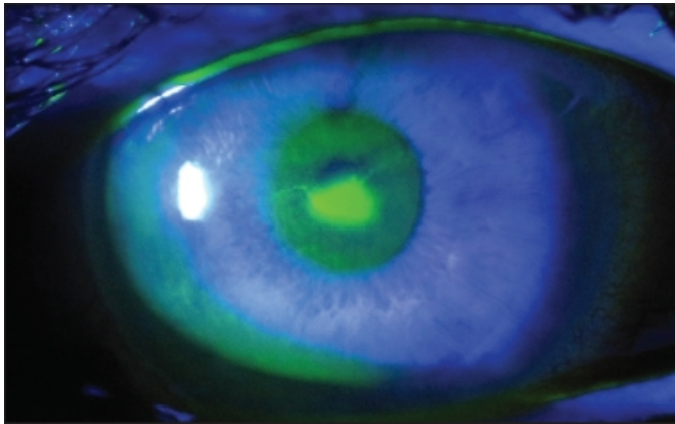
Patching vs Bandage Lens



Patching vs. Bandage Lens

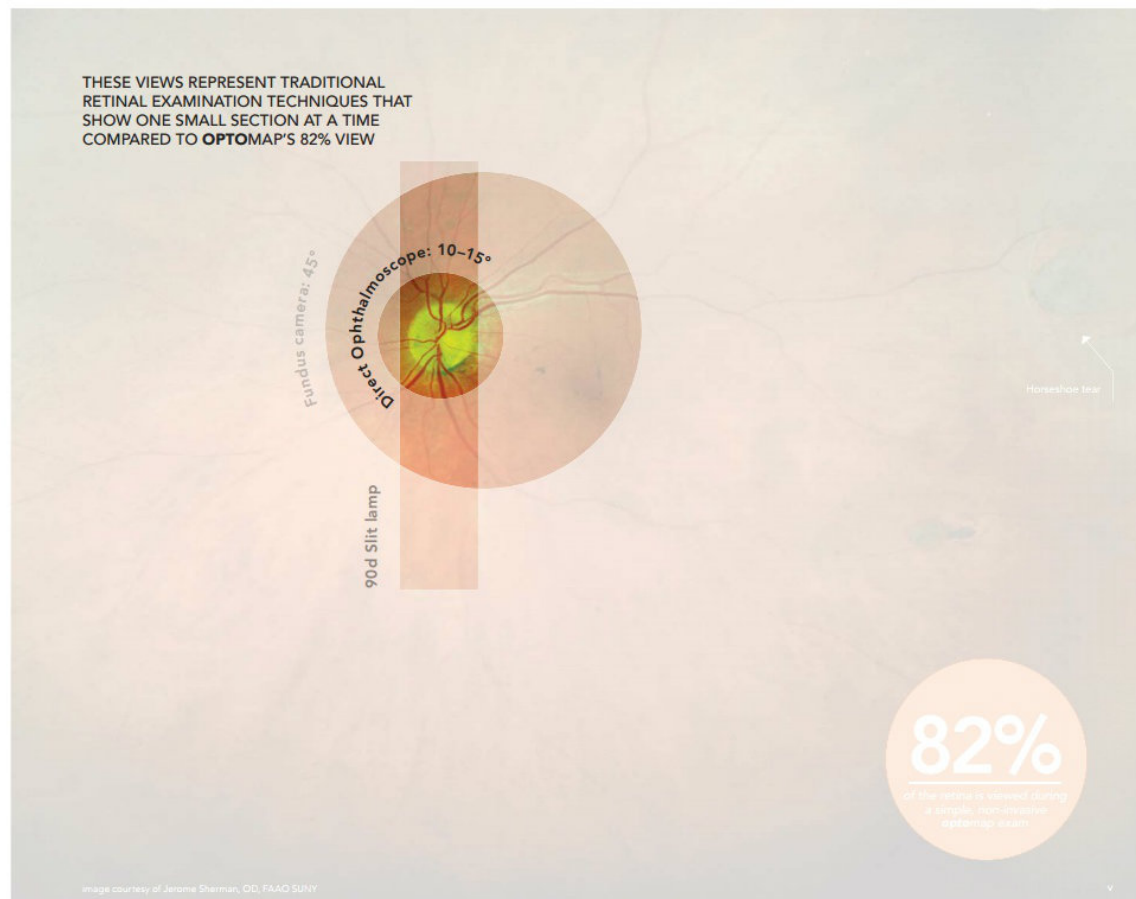
- Monitor status
- Apply drops
- Addresses Pain
- Social Aspect
- Depth Perception
- Inexpensive





Corneal abrasion

Direct Ophthalmoscopy



Normal Fundus



Direct Ophthalmoscopy

- What am I looking for???
- Asymmetry in appearance/color of nerve
- Blood OUTSIDE of blood vessels
- Disc margins
- Macular pathology
 - Heme or whitish exudate
- Anything else that doesn't look “normal” or “right”



Thanks!

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